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THE INFORMAL APPROACH IN HEALTH EDUCATION

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and

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**Lee HOLDER, health educator with the Home Nursing Project for Albany County, Wyoming, says " At the time this was written (last summer), I was serving as Assistant Director of the Division of Community Services and Health Education with the Wyoming Department of Public Health in Cheyenne. Dr. Subbiah was a field training student of mine, from the University of California School of Public Health in Berkley. Dr. Subbiah, is now back in his native India as a Medical Director, involved in Health Education Activities in his country "*

Several methods of education of the public are generally recognized. Three of the basic educational methods are (*a*) mass media (i.e., films, materials newspapers, radio, television), (*b*) group methods (i.e., the community organization process) and (*c*) person-to-person approaches.

The authors became interested in studying the " person to person " method in health education and more specifically what is described here as an " informal approach ". An informal approach in health education is simply a method of meeting established objectives in an unstructured setting, without a stated agenda or formalized meeting. This approach is adapted to unstructured settings, such as coffee breaks, social hours and dinner discussions more than to an office appointment, scheduled meeting, a speech, or even a panel discussion.

Is it possible to accomplish task oriented objectives in an informal setting without structure, appointments, agenda, etc.? The authors thought so, based on knowledge of interpersonal relationshops, group dyswander Ryan and others. This approach to problem solving has not been fully documented, so the authors decided to attempt to do so in this preliminary study.

Opportunity for Study

The Division of Health Education of the State Health Department in which the authors were working was invited to participate in a conference of a statewide " Association of officials throughout the State. The association executive officials throughout the State. The association executive secretary agreed to the type of informal participation suggested, therefore, scheduled no formal presentation for the authors.

Prior to the conference, the authors informally discussed their possible function at the meeting, especially since there was no planned presentation on which to focus. I talking this over, on the way in the conference, certain objectives were established. They were based on agency (Health Department) objectives, anticipated outcome of the meeting (based on past experience and previous contacts with the association) and the desire to evaluate the process of an " informal approach " (as a method or process rather than content, perse).

Objectives established by the authors were basically in two areas :

A. *General objectives.*—Learning perceptions and fellings of the association members, particularly as they relate to the health department.

B. *Anticipated objectives*—Those related to specific content on problem areas.

More specifically, the objectives developed were:

(1) To answer certain content area questions about the health department (e.g., tuberculin testing, discontinuance of the mobile X-ray unit, specific personnel situation, etc.).

(2) To explain and interpret the philosophy of the department and activities relating to this group.

(3) To meet association members and develop a good inter-personal relationship with them in anticipating future work with them in developing specific programme areas.

(4) To see how the association operates, communicates and relates to other groups and to ascertain the resulting potential for further health education activities.

(5) To focus specifically on the informal approach to education in an unstructured situation and to determine the value and potential utilisation of same in working with the public—

(*a*) In developing inter-personal relationships.

(*b*) In identifying mutual problems and barriers in health programmes.

(*c*) In developing new programmes.

(*d*) In disseminating information.

(*e*) In gaining useful information on perceptions, attitudes, problems, needs, etc., from the represented municipalities.

Design

A study design was developed, in an attempt to gain more insight into the informal approach situation.

1. Study the conference programmes plan in order to observe potential opportunities for informal, unstructured participation.

2. Look for opportunities to exploit in order to meet the stated objectives.

3. Talk informally and individually with association members, explaining, at that time, some of the reasons for attending the conference (e.g., "to see what questions you have about the health department.") in order to stimulate discussion about the Agency (Health Department) and thereby achieve certain other objectives.

Sequence of Activities

After registering and reviewing the conference plan, the authors entered into private conversations with association members. Since some acquaintances had been made previously, this was a rather simple matter. Other introductions were made as the opportunity presented itself.

In talking to various members of the association of municipalities, it was found that some wondered why health department staff members were in attendance with no apparent functions. It was easy then to explain some of the purposes in asking their views, opinions, questions, etc. This facilitated discussion and aided in (*a*) trouble shooting areas of conflict and (*b*) interpreting the role of the health department, its principles, philsophies and activities (to the limited extent possible in a short period of time).

Specific Experiences Cited

1. The Mayor and town clerk of a small town asked a technical question about improving their inadequate water-supply. Since this could not be answered technically, the matter was referred subsequently to the Division of Environmental Sanitation, which in turn had a regional engineer contact the officials and discuss the problem. This procedure, on the author's part, apparently satisfied the town officials.

2. Conflict with the department was anticipated with the Mayor of a major city in the State. This conflict evolved from some misunderstandings between State and local officials

on some personal policies affecting Health department personnel working in that city. Although the State Health Department (whom the authors represented) was aware of the conflict, the motivation for the conflict was not clear.

One of the "anticipated objectives" of the authors was to explore this problem with the particular mayor and to see what could be done to help to reslove it.

Upon meeting the mayor in question, the authors progressed through several stages in approaching the problem--

(*a*) Introduction and greeting to the Mayor. At this time, there was only superficial discussion of general items.

(*b*). Agreement to talk informally at a scheduled social hour, this was primarily indicted by the mayor of the initial contact and readily accepted by the authors. As the social hour this followed up, per original plan, and was amazingly successful, beyond anticipated results.

At the social hour, the informality and permissiveness of the discussion encouraged the mayor to think aloud about the conflict situation. No. value judgments were made by the authors. It was then possible to get the mayor's perceptions and attitudes about the entire situation, along wit possible courses of action. After the mayor had made his points, the authors were able to present their ideas, attiudes and perceptions in representing their egency, but at no point did they chalange the mayor nor attempt to place him in a defensive position.

At a dinner following the social hour, it was possible to continue the discussion and to branch out into an interpretation and explanation of other phases of health in a positive frame of reference. Other persons at the dinner were able to support certain Health department activities. It was possible, therefore, with this informal approach, to progress from an area of conflict with the mayor to a positive and supportive situation of real benefit to the agency.

3. The wife of a councilman from a small town asked questions about a health programme sponsored primarily by a voluntary health agency in the State. Since this was not a Health department programme the authors discussed their opinions and knowledge of the programme and referred this request to the voluntary agency executive for subsequent follow up.

4. When the mayor of another town questioned the author about their role at the conference, they were able to interpret their role in attending, then solicited questions and comments Subsequently, an invitation was extended to visit the mayor at his town.

5. Anxiety reactions were encountered in talking with the mayor of another town. This mayor perceived the Health department's role only as a legal enforcement procedure. Here again, was an opportunity to interpret philosophies, functions and activities of the agency and to get ideas for correcting these misconceptions in the future.

6. "You don't need to come to our town because we are healthy", was the reaction of another town councilman. Knowing of his perceptions and attitudes in regard to the Health department, it was again possible to interpret phases of department activities other than the enforcement activities.

Follow up

Follow up action centered around discussion of the observed reactions, attitudes, and perception of members of the Association of Municipalities with the Director of the State Health Department after the conference. It was possible, then to make recommendations for positive follow up action designed to correct some of the misconceptions observed, resolve some existing conflicts, and prevent further occurrence of similar circumstances in the future.

Other follow-up activities centered around referral of specific questions about technical or content matters to specific agencies or persons as originally agreed.

Discussion

It is observed that people evidently have "mental sets" in which they segregate into compartments, various parts of their lives, e.g., work, from family, from recreation, from religion, etc. In other words, "business" to many is the time when they are on the job in an office during specific hours. Evidently, this metal set does not include in many cases, work as being part of an informal activity such as group dinners or social hours. Capitalizing on this observation, therefore, it appears that people are less inhibited in such situations to discuss freely certain problems and situations which relate to working situations and these same people are often unaware of the significance of this type of informal session, whereas the authors were taking advantage of these informal opportunities to get across certain points that were cretainly task oriented. The other parties involved had a mental set which precluded their thinking of this in the same framework. In this framework, the authors felt that they might get more accomplished than would have been possible in a formal working situation where expectations, relationships, defences and modes of dehaviours might be quite different and more inhibited than at a social hour or informal discussion session.

It has been, a basic philosophy of health education that only when good interpersonal relationships are formed are effective working relationships established. It is usually easier and more fruitful, it is believed, to work with a friend than with a stranger. It is upon this premise that health educators frequently attempt to estabilsh good relationships with people at informal sessions and subsequently find this productive in accomplishing long range goals. People with whom they associate, however, do not often identify this interpersonal relationship procedure nor its significance, hence inhibitions in talking about working situations are reduced considerably.

Similar instances could be cited by the authors in other informally oriented situations where this approach helped to promote further understanding and learning by this personal contact and understanding together with a favourable mental set. The health educator, in not only being perceived a friend, but actually perceiving himself as a friend, aids in mutual understanding and learning. This has been borne out by experiences of one of the authors in India, as well as in the United States.

It is to be emphasized that this type of an informal, unstructured approach is *an aid only* in health education activities. It is merely one step in a continuum, but nevertheless an important step which probably is not available in a structured setting in some cases, particularly with those in other status-levels which often prevents easy communication. In a total program, both structured and unstructured approaches normally are necessary, one supplementing another.

Meeting the needs of the people at their own level of thinking is another extremely important factor observed in this informal approach. Communications are facilitated between the two parties involved. With a formal presentation, for example, one is not sure that the message is being received, and if it is, one is not sure that the message is meeting the needs of the received. Griffiths and Knutson allude to this same phenomenon of communicating which others and testing ideas in informal group situations. In an informal, unstructured situation as described herein, it is possible to ascertain the thinking and specific needs of each person individually and to take positive action to meet these needs. It is also possible, at the same time, to accomplish preconceived objections and to ascertain in a more positive way whether the two parties are really communicating. This, it is felt, is not as possible in a formalized presentation.

A "third person role" has been observed by the authors, wherein the person is not directly involved in the specific situation (i.e., a conflict between two persons or agencies.

This third person can act as a catalyst, mediator, and one to interpret attitudes, perceptions, and various possible courses of action without actually getting ego-involved in the situation. Had the authors been in a direct role in some of the conflict situations, probably it would not have been possible to establish rapport and communicate so easily because of preexisting defenses on the part of both parties.

Limiting Factors

An informal approach as an educational technique has obvious limiting factors unless properly integrated with other educational methods. Many variables are present which help to determine to outcome of a given situation.

Some of the anticipated objectives will not always be met. For example, if the persons concerned are not present at the conference or meeting, then obviously nothing can be done. Timing is always a crucial factor. One must have the opportunity to talk with the "target" person and be able to exploit the opportunity by correct timing and personal approach.

In an informal session, emphasizing individual discussions, the number of people with whom a person can talk is greatly limited by time and other factors. This approach is obviously much more adaptable to a relatively small conference or meeting than to a large conference.

It is probable that all people would not be effective in an unstructed informal situation such as that described. The personality, skill and confidence of the individuals involved are important factors. It requires a person with a flexible attitude and whose behaviour is conducive to permissive expressions of opinions and attitudes by the other person. These factors can be developed, to a great extent, if desired.

It is absolutely necessary to set definite objectives prior to an informal approach situation such as the one described. If objectives are not established and positive efforts made to

accomplish them, then there will be little purpose in attending a conference. Accomplishments would be, in such a case, haphazard and incidental and the effectiveness of the participants would be reduced considerably.

Further testing in a controlled study is needed to see if these observations are valid.

Evaluation

In reviewing the original objectives, it is possible to make a subjective evaluation of results :—

(1) Several "content" questions were answered about the health department and others were referred to appropriate persons or agencies. Some of the anticipated questions did not arise, whereas others did.

(2) Explaining and interpreting the philosophy and activities of the department was met in almost all cases.

(3) Many association members were met (most of them for the first time) and it is felt that good inter-personal relationships were developed. Only time will tell about the long range signifiance of this phenomenon.

(4) In attending the conference sessions, it was possible to see how the association operates, communicates and relates to other groups. It was possible to see problems facing the group and the resulting attitudes and opinions. In all this, the potential for health education activities with this group and its members was clarified to a great extent.

(5) Objective five, in focusing on the values and limitations of an informal approach in health education, has been discussed at length in this paper. The idea for a critical look at this approach, as it relates to process and content, evolved from casual discussions between the authors before and after the meeting. It is hoped that others will look critically at the factors described herein to determine further the educational values inherent in this approach and develop other techniques to use effectively.

Summary

The authors have attempted to document the educational significance of participating in a conference in an informal situation in which objectives of the agency represented were met without being a part of the total structured programme. The authors feel that there are many values inherent in an informal approach and that many objectives can be met that are not possible in a formal setting.

Observed phenomena included—

(1) " Mental set" of work, play, business, recreation, etc., by many people lessen inhibitions in discussing task oriented situations in an unstructured informal situation, such as a social hour.

(2) Good interpersonal relationships between health educators and various publics are extremely important. It is observed that it is easier and more fruitful to work with friends than strangers, and ultimately aids in accomplishing long-range objectives.

(3) A "third person role" exists wherein persons not ego-involved in a conflict situation can act as a mediator and catalyst in observing perceptions and attitudes of both parties and taking action to help resolve the conflict.

The authors stress the need for a controlled study to determine if the ideas and observations presented are valid.

[*Courtesy* : " Adult Leadership"]

IMPORTANCE OF SURVEYS IN HEALTH PROGRAMMES

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Adequate Vital Statistics constitute the basis for recording and appraising the state of health of nations and for formulating the structure and extension of suitable public health services. It is only with the aid of reliable statistics we can achieve a correct understanding of the problems. It need hardly be emphasized that reliable statistics help to indicate how some of the problems can be tackled effectively and solved. The problems that we generally come across in public health field are :—

(1) Is inoculation an effective measure against cholera.

(2) What is the effect of vaccination in the reduction in smallpox deaths.

(3) Has immunization against diptheria reduced the intensity of the attack rate and death rate.

(4) Is the new vaccine developed for protecting children against whooping cough producing useful results.

(5) Does a mass treatment against hookworm ultimately eradicate the disease.

(6) What is the effect of a supplementary food stuff in the growth of children.

There are innumerable problems as detailed above. All these can be effectively tackled only by the proper collection of Statistical data and analysis.

We are interested in the nature and distribution of diseases and so we reckon the specific death rates categorised by age and sex group as diseases do not occur uniformly at all ages and both sexes. As certain occupations have higher risk

rates to diseases we are also interested in death rates by categories of occupation. Expectation of life gives us the total life span of anyone at a specified age and this is a measure of both health conditions as well as their standard of life. Specific death rates have got immense importance in public health statistics. So also the age specific death rate and sex specific death rate. Infant mortality which is an indicator of public health conditions is the age specific mortality among infants. Infant mortality which is an indicator of public health conditions is the age specific mortality among infants. Infant mortality is defined as

$$\frac{\textit{Totdl Infant death}}{\textit{Total live births.}} \times 1000.$$

Infants more than any section of the population depend to a great extent on the environmental conditions for their survival. This is the reason why death of an infant is ascribed to poor and insanitary environment.

A study into infant death should include—

(1) Investigation into still births.

(2) Study of deaths of infants due to prematurity.

(3) Study of deaths of infants during the neo-natal period.

(4) Study of deaths of children from 1 to 11 months.

Maternal mortality is defined as

$$\frac{\textit{Deaths due to puerperal causes}}{\textit{Total Live and still Births}} \times 1000$$

A large maternal mortality will only mean only neglect of expectant mothers prior to delivery. The chief causes of maternal mortality are malnutrition and undernutrition which produce anæmias and toxæmias during pregnancy.

Definition of sample, randam sample, and stratified random sample.

A number of items that are drawn from a large quantity of similar items and examined or measured to obtain information about the large quantity of items is defined as Sample. A value found from a sample is called a Statistic whereas

the corresponding true or expected value in the universe is called parameter. The primary purpose of all samples is to learn something about a universe often to estimate the value of the parameter from the Statistic. The most common method of taking a sample and the one to which most of the statistical theory of sampling applies in the random.

Samples are random when the method of drawing ensures that all items have an equal chance of entering the sample and representative or stratified when the additional restriction is imposed that all sub-groups shall be represented in the same proportion as they occur in the large quantity of bulk which is being sampled.

Reasons for sampling.—Complete population censuses in which appropriate questions are asked in respect of every individual are large. They employ several people and hence costly. Through the use of proper statistical technique a sample selection instead of a complete count can often be made with notable economics in effort, time and cost and generally with more efficient control.

Use of sample surveys.—(1) To obtain counts and characteristics of the population without recourse to a complete census, (2) to obtain additional characteristics of the population when the frame is furnished by a concurrent complete census of registration. Frame is explained as follows: List of population, area by area, dwelling unit by dwelling unit or even name by name, and (3) to obtain characteristics of the population without a concurrent census.

Importance of Health Surveys.—The idea is to provide morbidity and health statistics by utilising whatever resources and methods are appropriate to the task. This is further intended to evaluate existing sources and methods and to develop new methodologies. The programme of the Health survey would consist of several surveys in order to meet diverse

statistical needs. The Family interview offers an especially useful and versatile source of demographic, social and economic information regarding the population to which the health characteristics are to be related.

The primary thing is to draw the map of the panchayat villages noting therein the number of maternity centres and other public health service particulars. The idea is to determine the pattern by which people meet their health problems and to establish an ideal rural life in respect of social, economical and public health aspects. The lines of action are as follows :—

(1) *Base line Survey*.—This is an initial careful survey to understand factors which cause health problems. This is also to analyse what the available resources are for developing improved health services.

(2) Studies to be conducted to evaluate the effectiveness of several public health programmes.

(3) Emphasis to be placed for studying the basic health problems that existed in the area selected for the experiment.

(4) Easy and workable method of recording and assessing the effects of the programmes to be developed.

Base Line Survey

In a base line survey the first thing required is to list the households in the area and the characteristics of the villages chosen for the survey. Then we have to conduct household surveys. In order to determine the quality and quantity of food stuffs consumed by the population we have to conduct diet surveys and also nutrition surveys. Nutrition surveys reveal the deficiencies in the diets consumed with the help of the key to the nutritional assessment schedule. A study of the registration of Births and Deaths will give ideas about Birth rate, Death rate, infant mortality rate and maternal mortality rate. These can be accompanied by Socio Health Survey and a Stool Survey. Listing of households is an essential step in the planning and execution of base line surveys

and this is to be done by visit to each and every household. First the households have to be serially numbered and a sketch map of the locality to be prepared showing important sketch map is intended to serve the following purposes :— with water facilities and with space for latrines.

(1) Provides a number for each household by which it will be indentified for future service programme.

(2) This provides an idea of the total number and types of houses in the village, proportion of houses with latrines, with water facilities and with space for latrines.

(3) This will definitely serve as a frame for sampling purposes for future surveys.

The Community Schedule helps to obtain particulars about village characteristics. The objectives of the household survey are as follows :—

(1) to determine the population size and its distribution by age, sex and marital status:

(2) occupation and religion of the head of the household;

(3) highest grade of education completed by any member of the household;

(4) Vaccinal status of population;

(5) vital statistics with particulars relating to—

(*a*) type of attendant at delivery; and

(*b*) extent of mortality and nature of medical care; and

(6) type of housing, source of drinking water and use of latrines.

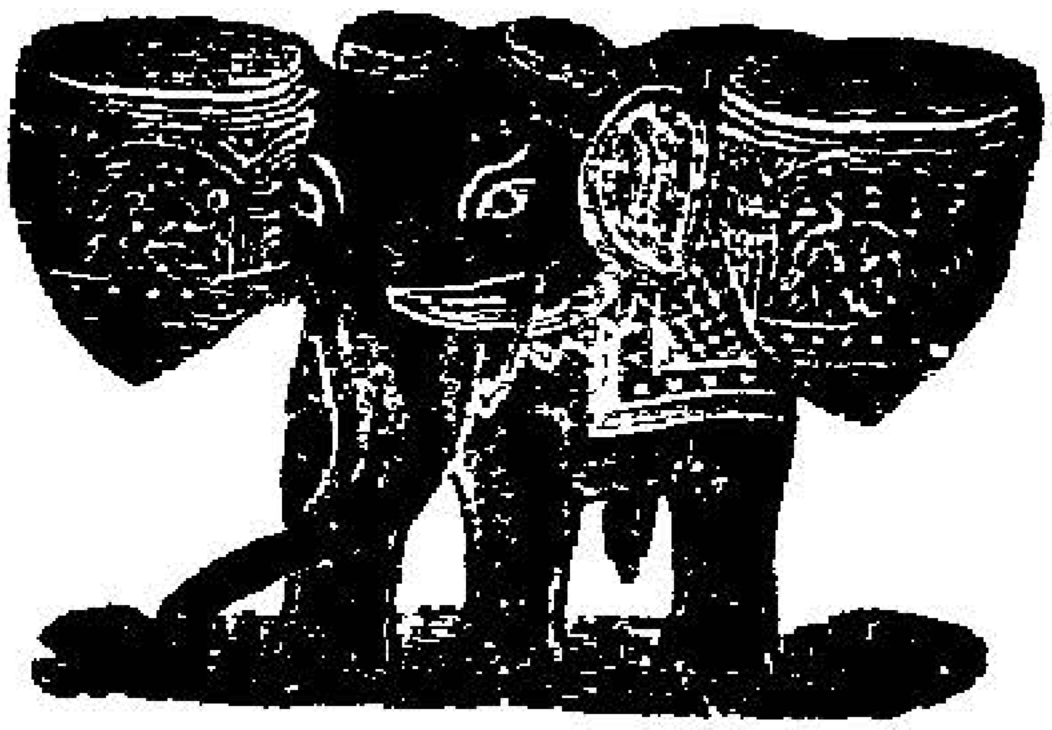
The purpose of maintenance of household record is to guide action programme using family as the unit of service and also to provide an integrated approach to health care. This will also enable the personal intended for the survey to do maximum technical work by minimising clerical work.

Further this will facilitate administrative and technical check over the work or the subordinate staff. The population characteristics can be obtained as follows :—

(1) Total population.
(2) Sex distribution.
(3) Age distribution.
(4) Marital status distribution.
(5) Religion and occupation.

It is admitted that social and cultural amenities enjoyed by a community have an impact on health condition. Information regarding the religious institutions and festivals are necessary for taking preventive steps against epidemics which are likely to spread during festival periods. The Community Schedule helps to collect the relevant data such as—

(1) Road system.
(2) Distribution of houses.
(3) Educational facilities.
(4) Religious institutions and festivals
(5) Main crops.



THE RELATION BETWEEN ABSENTEEISM AND JOB SATISFACTION

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Psychologically work poses a paradoxical challenge to the working man, on the one hand, it affords scope for activity, an outlet for human energy, and a means whereby the social aspirations of men and women achieve fulfilment. On the other hand, work imposes strains, and its limiting factors are disagreeable. On the social side, rivalries, and conflicts create unpleasantness and strained relationships. As such, the degree to which work satisfies, and factors which contribute to the satisfying nature of work are important considerations in industry. Further, a knowledge of the respective effects of satisfying and unsatisfying conditions of industrial work will be helpful in securing increased work satisfaction, which, without doubt, underlies the achievement of high levels of industrial productivity.

It is commonly thought that one of the first visible signs of increasing dissatisfaction is the increase of absenteeism. The worker makes excuses, absents himself as and when he pleases, and reveals a marked degree of indifference towards work. His work is no longer attractive to him, and the money which it brings may even seem a trifling return for his efforts. If this is likely to be true, it would be important to see whether such a supposition has the backing of facts. Certain industrial managements have expressed the view that under the present condition of Employees' State Insurance Scheme, the scope for absenteeism in industry has become greater. In view of the practical importance of this problem, the Personnel and Social Research Laboratory at Loyola

College, Madras, has undertaken a research project on the relationship between absenteeism and job satisfaction. This paper summarises the main findings of a preliminary study.

Problem

The problem investigated in this study was the relationship, if any, between the observed level of satisfaction in industrial workers drawn from a group of small sized and a group of large sized industrial concerns, and regularity in work, as evidenced by attendance records. The hypothesis examined was that people who are generally satisfied with their job conditions are likely to be regular in attending work. If this hypothesis is true, it would follow that those who are more dissatisfied with their work would have a relatively poor attendance record, whereas those who are comparatively less dissatisfied will have a better attendance record.

A subsidiary hypothesis set for verification was that in the larger type of industrial concerns, job satisfaction is likely to be at a comparatively higher level than it is in the smaller type of concerns. It would follow from this that if job satisfaction does in fact have any determinate relationship with absenteeism in industry, there would be fewer problems of absenteeism in the larger as compared with the smaller types of industrial concerns.

Method of Investigation

The investigation of the relationship between job satisfaction and absenteeism in industry called for a collection of two sets of data. First, data regarding attendance of samples of workers in large and small sized establishments. This was done by reference to factory records. Data for six months preceding the time of the investigations were assembled, so as to derive a measure of regularity at work. For the purpose of this pilot study, a breakdown of the specific causes of absence was not attempted. Secondly, data regarding job satisfaction were collected from the same samples of

workers, drawn from small and large sized industrial establishments, by getting them to respond to a standard questionnaire on job satisfaction, developed at the Personnel Research Laboratory at Loyola College, Madras.

Job Satisfaction Questionnaire

The design of the satisfaction questionnaire was based on ten points, of common interest to industrial workers. These are emoluments, work conditions, relations with superiors, relations with equals and subordinates, type of work, quantum of output, quality control, incentives, obstacles to progress, and inner feelings created by work. For each of these aspects which usually underlie satisfaction or dissatisfaction created by work, a set of ten questions was framed. In this way, a total of hundred questions had to be responded to. In every case, the response had to be in the form of a value ranging from zero, representing extreme dissatisfaction, to 4, indicating a high level of satisfaction. These values, when added up, would yield a total possible score of 400, which can be reduced to a percentage. A further analysis would also be possible by grouping the responses under the ten different categories of questions, so as to pinpoint varying degrees of satisfaction or dissatisfaction relative to specific conditions. This analysis was not, however, undertaken during the pilot study, since the main purpose of this phase of study was to establish an association between job satisfaction and absenteeism in industry.

Interviews

It is desirable to follow up responses to the questionnaire by interviews with respondents. This serves the useful purpose of getting confirmatory evidence, regarding what is indicated by responses to questionnaire. It was envisaged that a proportion of not less than 25 per cent of the respondents to the questionnaire should be interviewed individually, each interview lasting for about 10 to 15 minutes, and centring around the points of the jobs satisfaction questionnaire.

Many administrative difficulties arose in arranging interviews with workers during their hours of work, and it was virtually impossible to contact workers outside factory hours. For the purpose of this report, therefore, interview proceedings of only a limited number of workers has been made available.

Analysis of Data

In every case, the measure of job satisfaction was expressed at a percentage derived from the total score of each individual responses to the job satisfaction questionnaire. The measure of regularity in attendance was the percentage of man hours lost as a result or absence from work, regardless of cause. The summary of results is represented in Table 1.

TABLE 1.

Measure of Job satisfaction and absence from work

Size of factory.	*Number of workers studied.*	*Mean percentages job satisfacation.*	*Standard deviation.*	*Mean percentages man hours cost.*	*Standard deviation.*
(1)	(2)	(3)	(4)	(5)	(6)
Large sized ..	90	67·7	12·3	23·88	5·3
Small sized ..	73	79·1	11·4	13·5	4·1
Total population.	163	72·7	11·8	16·9	4·7

The standard error of the difference between the large and the small sized establishments with regard to job satisfaction is 1·8 This yields a 't' value of 6.7 which is significant at the 0·01 per cent level. The standard error of the difference between large and small establishments with regard to mean percentages of man hours lost is 0.23, which yields a 't' value of 45. This again is significant at the 0.01 level. Since the differences between workers in the large and small sized factories, both as regards job satisfaction and man hours lost is highly significant, it would follow that job satisfaction is greater and the proportion of man hours lost is less in small sized, as compared with large sized factories. It will be seen

that this finding is contratory to expectation. The relation between job satisfaction and regularity in attendance is greater in the small-sized concerns, not in large-sized ones.

A further point of interest arises in connection with the association between job satisfaction and absenteeism in industry. The question which may be raised in this connection is whether those who score high on job satisfaction have a lower percentage of man hours lost, as compared with those who score low. This is capable of being ascertained by finding out the coefficients of correlation between job satisfaction scores of different individual and percentages of man hours lost. The results are summarized in Table 2 below :—

TABLE 2.

Correlation between job atisfaction scores and percentage of man hours lost.

Size of factory. (1)	*N.*	*Coefficient of correlation (t),* (2)	*Level of significance.* (3)
Small sized	90	0·532	P/0·001
Large sized	73	0·381	P/0·001

The calculated 't 'value for the correlation coefficient relating to workers employed in small-sized factories is 23. For large-sized factories, it is 22.4. Both these values are highly significant. It would thus appear that there is a significant relationship between job satisfaction and percentage of man hours lost. This finding conforms to expectation.

Discussion

From a commonsense point of view, it would appear reasonable to argue that when people feel dissatisfied with their conditions of work, or when human relations become strained, one possible reaction may be absence from work, or irregularity in attendance, resulting in loss of man hours. In the present context of industry, it has been suggested that the Employees' State Insurance Scheme affords a certain amount of coverage against loss to the workers resulting from absence from work.

This would make absenteeism a convenient way of reacting to one's frustrations or dissatisfaction arising in connection with work.

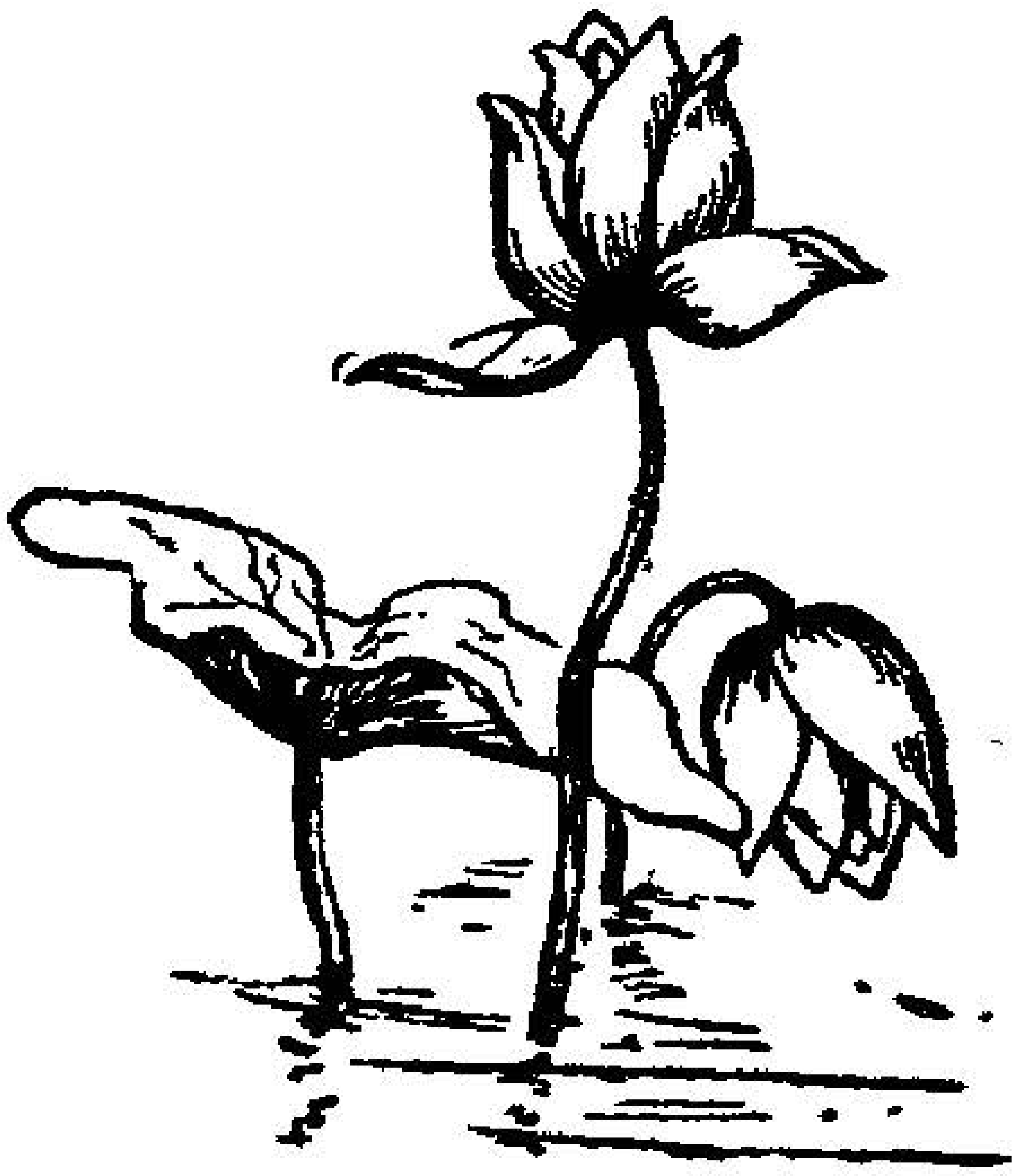
One of the commonest reasons underlying absence from work, as stated by workers who have been interviewed is sickness, minor ailments such as cough and cold, fever or stomach disorders were said to be very common and frequent in the climate of Madras. The period between March and September was reported to be a particularly bad time of the year. Next in importance comes social customs and practice such as marriages, religious ceremonies and the like. Very few of the workers interviewed expressed strong and open feelings of dissatisfaction with the conditions of their work or hostility against their employees. The rising costs of living and the insufficiency of their earnings to meet increases in the prices of essential commodities. was nevertheless a common complaint. Those employed in the larger factories stated that things were well organized, and conditions in work places were orderly. In the small-sized concerns, on the other hand, certain irritating conditions such as heat, smoke, etc., did not appear to be effectively controlled. Work places, especially in the smaller establishments were reported to be poorly ventilated. All the same, workers in small factories registered a higher level of job satisfaction and fewer man hours lost, as compared with employees of the larger firms.

It must be noted that although in this pilot study, the difference between large and small industrial concerns have formed out to statistically significant, there are certain limiting factors which cannot be ignored. First, the period over which absenteeism records were studied was six months from January to July 1963. It remains to be seen whether the values obtained will be the same if a longer period were to be studied. Secondly, the sample of workers studied was not a selected sample. All the same, it cannot be claimed that a rendom sample in the statistical sense was chosen for study. Whether or not the same trends will be evident in a random

sample is a matter for future research. Thirdly, it was not possible during the brief period of this pilot study, to collect data regarding the output of different workers. It is not unlikely that many workers who have a good record of output will show a poor attendance record, while some who have a good record of attendance will reveal a poor record of output. These are points which will have to be looked into when the main study is undertaken.

Conclusion

In conclusion, it is important to remember that any step taken by managements of industrial concerns to secure greater work satisfaction is likely to be rewarding in the sense that workers may be expected to be more regular in attendance, and the progress of work is liable to be smoother. Side by side with this it is probably true that workers are generally tolerant towards uncongenial work conditions, but how far such conditions affect the quantum of their output or influence their motivation, are questions which will have to be examined in greater detail.



RECENT ADVANCES IN TREATMENT OF CHOLERA

This is an acute intestinal infection of man caused by *Vibrio Cholerae*. The disease is endemic in many parts of the East, particularly West Bengal and East Pakistan. Mild ambulatory cases and carriers constitute the most important factor in the spread of cholera which, like dysentery, is transmitted by water, food, fingers and flies. *V. cholerae* are killed by drying but remain viable in water (viz., in pond) for weeks. It is basically a self-limiting disease accompanied by profuse and frequent painless motions with or without vomitting. At first the motions are fæcal and bile stained, but they soon becomes colourless like 'rice-water' containing white (sometimes blood-tinged) flakes of mucus. The protein-free watery stools of cholera patients generally contains 135 m.Eq/L of sodium, 15m.Eq/L of potassium, 110m.Eq/L of chloride and 40m.Eq/L of bicarbonate. The stool losses have been found to be istonic with the plasma. But the stool bicarbonate and potassium concentrations are in excess of those in plasma. The bicarbonate loss gives rise to severe acidosis and uncorrected potassium depletion leads to hypo-kalaemia. Viscosity of blood is increased impairing its circulation and giving rise to shock, cyanosis and oliguria. The interstital fluid is decreased markedly and the plasma volume is rapidly reduced. The patient is often brought in shock with systolic blood pressure below 80 mm. of Hg. and imperceptible pulse. He may collapsed, cold and clammy with marked signs of dehydration.

Diagnosis

Clinical diagnosis is possible in most cases by the bedside; it is only too easy during an outbreak; but it would be desirable especially at the beginning and end of an epidemic and

in sporadic and atypical cases to have it confirmed by laboratory examinations. It is, however, advisable from the public health point of view to regard all cases of gastro-enteritis as cases of clinical cholera particularly so in endemic areas.

Treatment

The principle of treatment is replacement of the fluid, salt and alkali losses. On the basis of the pathophysiologic changes in cholera, a simple and effective treatment has recently been formulated after controlled trials in Calcutta and also in other countries. Mortality rates in untreated and under-treated patients is very high but with modern therapy it should be practically nil.

The first and urgent need is to replace intravenously water and electrolytes already lost by the patient before admission. This can be and should be determined clinically at the emergency hour. The reliability of clinical evaluation as a guide to the intravenous fluid requirements was proved by the studies of the 1963 epidemic in Calcutta. Pulse rate and blood-pressure should be taken and recorded immediately after admission and subsequently every 2–4 hours during the course of treatment. After the acute dehydration has been overcome, the patient will require further intravenous fluid depending on the volume evacuations and duration of diarrhoea. The stools should therefore be measured and intravenous fluid given to equate the output.

It is important that intravenous replacement solutions be sterile, free of pyrogens and given through scrupulously clean infusion sets. Unless these precautions are observed, rigors and febrile reactions will ensue. Such pyrogenic reactions cause intense discomfort to the patient, and gives rise to apprehension on the part of relations and staff. However, the occurrence of such a reaction should not be allowed to interrupt necessary intravenous therapy. The offending bottle and infusion set should be removed at once, and a new bottle and set substituted.

A venipuncture is performed by using a relatively large gauge needle which is left in place well secured. An arm (or leg) vein is usually used, otherwise the femoral vein may be utilized at the first instance. Intravenous infusion is started, with the minimum of delay in a collapsed patient, at first rapidly (continuous flow of about 100 ml. per minute) until full radial pulse is restored. The usual procedure for saline-alkali therapy is 2 : 1 ratio by volume of isotonic saline to isotonic sodium lactate (one-sixth molar) or isotonic sodium bicarbonate (2 per cent). Bicarbonate and lactate are equally efficacious, the difference being that bicarbonate corrects acidosis slightly more rapidly while lactate solutions is more stable and easier to prepare. The initial infusion for an adult case usually comprises two parts, say two bottles of normal saline followed by one bottle of alkali solution and continued in this order.

The fluid is then infused more slowly (about 25 ml. per ml.) in the same order keeping the needle *in situ*. Amazing improvement follows the correction of the fluid deficit in about four hours or so. The patient becomes comfortable with the restoration of skin elasticity in addition to satisfactory pulse and blood pressure. There may, however, be a recurrence of the collapse state on further purging and loss of fluid which should be replaced promptly again. The patient has, therefore, to be watched carefully and the stools measured so that the corresponding amount is infused rapidly after each evacuation. After the first four hours, the quantity of fluid given is determined by and equal to the output of stools. For invisible fluid loss, about one more litre of the saline-alkali fluid is infused in the same ratio or by oral administration of fluids which contributes to the well-being of patients. The fluid requirement in an average adult is about 20–25 litres.

Nursing

To facilitate collection of stools passed, the patient is best treated on a ' cholera cot ' for the duration of the acute phase. The cot is made of canvas or jute, like a camp bed, and has a

hole about 8 to 10 inches in diameter under the buttocks. A *Khativa* may be suitably converted into a cholera bed. If available, a rubber sheet on the bed with an attached sleeve that fits through the whole would channel all excreta into a bucket or any other suitable receptacle on the floor, so that the same can be measured without moving the patient. A wooden dip-stick suitably calibrated may be used to estimate the amount of excreta. Accurate records of fluid intake and output should be kept noting the time and amount of each infusion and the output. In a rural area, it would be possible to dig in the mud floor of a thatched hut a hole large enough to hold an earthern vessel of about 8 to 10 inches in diameter under the buttock, the patient lying on floor bed or mat The stools are collected automatically in the pot which may contain 1 per cent cresol with advantage. If not possible, stool loss has to be suggested each time.

Antibiotic Treatment

It is necessary to attack the cholera vibrio with an antibacterial agent like *tetracycline* which reduce the duration and amount of diarrhoea besides it has a rapid sterilizing effect in the gut. The intravenous fluid requirements of the cholera patient are significantly reduced by this antibiotic therapy. The drug should be instituted by mouth shortly after admission and 500 mg. is given orally every six hours for eight doses preferably under the doctor's supervision. Any dose vomited out should be repeated, but vomiting is rare after the initial infusion. All tetracycline treated patients become vibrio free within 24 hours; those not treated with antibiotic continue excreting vibrios for 6 days.

The potassium losses may be serve after large evacuations, but may be corrected with green coconut water by mouth. It contains about 70 m. Eq/L of Potassium and approximately 6 oz. of green coconut or 'dab water' for each litre of stool will prevent significant potassium depletion in the cholera patient. Alternatively 10 ml. of a mixture

made up of 100 grams each of pottasium citrate, pottasium acetate and potassium bicarbonate per litre of water may be given by mouth three times daily.

The intravenous therapy is terminated on the basis of (*a*) cessation of diarrhoea, (*b*) maintenance of pulse and blood pressure, (*c*) retention of fluids by mouth and (*d*) flow of urine. The patient is then put on a bland diet, and an average case is discharged by the 4th or 5th day. *Treatment in children* in whom the disease is more common with higher mortality rate needs special attention. They cannot stand dehydration well; they are not just small adults. The most effective schedule for children has not yet been worked out. The initial infusion given without delay would be a bottle of normal saline followed by half a bottle of alkali solution intravenously at a rapid rate. External jugular or femoral vein may have to be used for the initial infusion. Later, It is continued in the arm or leg vein a rate according to the child's condition and stool volume. The vein may have to be opened, but subcutaneous administration of saline is better avoided. Intra-peritoneal infusion has not yet been properly evaluated. Tetracycline pediatric drops should be started as early as possible and so also sips of water and green coconut water. Antibiotics have special places and calcium injections for tetany and sedatives for convulsion, if any, may also be used.

Cholera in pregnant women also necessitates extra precaution; abortion is common though no method is known to prevent such a catastrophe. Acidosis is harmful to the foetus; dehydration may cause involuntary uterine contractions comparable to cramps in the voluntary muscles; and circula; tory collapse reduce the placental blood flow. All these are liable to cause intra-uterine death of the foetus, abortions and premature labour. Cholera should be treated with all emphasis, management of pregnancy being secondary. Masterly inactivity would be the best policy unless there are special indications. For instance ergometrine injection is given after

abortion, dilatation and curetting being postponed. If the foetal head is in the perineum low forceps may be applied. Placenta may be retained for a long time; it would be safe to leave it alone. An obstetrician may have to be consulted. Incidentally, pregnant women need not be exempted from cholera vaccination.

Prevention

Besides isolation and care of the patients if treated at home, the medical officer in charge has to take care to disinfect the excreta and soited clothes. The utensils used for the patients should be separated from the rest and boiled. In the rural areas the best way to dispose off excreta is to bury them with lime in a pit dug out at a resonable distance. Attention should also be paid to the care of the community, especially in respect of (*a*) disinfection of the all water sources with bleaching powder and provision of adequate and safe water supply preferably from tube wells, (*b*) mass immunization and (*c*) health education.

The experiences in the 1963 epidemic in Calcutta indicated that cholera can well be treated on the basis of bedside clinical judgment only without blood or plasma specific gravity determinations, though scientifically speaking, particularly in children, determination of plasma specific gravity is very helpful and provides a precise means of calculating fluid requirements. This is not however practicable in rural areas, nor even in an infectious diseases hospital during the peak of an epidemic. If the space, bed, sterile intravenous sets and fluids, antibiotics and trained personnel are available at the time and place of an outbreak of the disease, the therapy is simple and extremely rewarding. Complications are rare except in children and pregnant women.

[EXTRACTS FROM TECHNICAL INFORMATION BULLETIN No. 2.]

STATE HEALTH EDUCATION COUNCIL

SEVENTH MEETING HELD AT SATHANUR

The Seventh Meeting of the State Health Education Council was held at Sathanur, North Arcot district, on 10th of July 1965. Srimathi Jothi Vencatachallum, Health Minister, Madras, the Chairman of the Council, presided over the meeting. The meeting started with the welcome and introductory remarks of the Chairman. During her address she introduced the new member Sri S. K. Sambandam, M.L.C., from South Arcot district, to the Council. Health Minister pointed out that the recommendations of the Council in the form of resolutions are under implementation.

While commending the principles and methods evolved from Research-*cum*-Action Projects in the field of Health Education, she observed that those principles and methods should be extended to all the other districts of the State.

Health Minister referred to the suggestion of Central Health Education Bureau regarding establishing Regional Health Education Cells, and disclosed that each Cell will cover three districts. At a later stage, each district will have a Health Education machinery with the existing District Health Department set up. She emphasised the need for family planning, for controlling the rapid growth of population and modern Health Education methods and techniques should be used for popularising the family planning. The process developed in the State Bureau of Health Education and Research-*cum*-Action Projects will be fully utilised in implementing the Family Planning Programme.

The Council reviewed the resolutions of the previous meetings. Dr. Subbiah, member-secretary who have presented the papers on the action taken on the resolutions explained the various stages of the progress made in the Government departments.

Photo shows the Chairman of the Council (Health Minister) addressing the Session.

5 DEC

While reviewing the activities of the various wings of State Health Education Bureau, the appointment of Social Worker and Home Science Assistant in Field Study and Demonstration Centre, the supply of "Arogya Margam" to all the schools, were discussed. Minister suggested that a nominal rate can be marked to the Journal and a small journal can be published for schools, on School Health Education.

MADRAS

The training needs in Health Education in the State, for Primary Health Centre staff on National Programmes were considered and discussed by the Council.

The other subjects taken for discussion are School Health Education, recommending small Health Education Cells for municipalities and registration of Voluntary Organisations with local bodies. While discussing on School Health Education it was suggested to include Health Education aspects in the syllabus of the teachers training and providing sessions in High Schools will be more valuable in School Health Education Programme.

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W.H.O. Day Celebrations in the City

Photos show Dr. Ramachandra Rao, Corporation Health Officer and Dr. R. Visalakshi of Directorate of Public Health, addressing the gathering, at Children's Theatre on W.H.O. Day Celebrations. Mr. Chittibabu, Mayor of Madras participated in the function.

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